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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/451,965	11/30/1999	ROBERT F. SENZIG	15-CT-4697	9713

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EXAMINER

HO, ALLEN C

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 08/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/451,965

Applicant(s)

SENZIG ET AL.

Examiner

Allen C. Ho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-11,15-19,21-24 and 26-29 is/are rejected.
- 7) ☒ Claim(s) 3, 12-14, 20, 25 and 30-35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 18 December 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. The finality of the previous Office action has been withdrawn. Rejections based on new grounds follow below.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4-10, 15, 18-24, 26, 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Khutoryansky *et al.* (U. S. Patent No. 5,636,259).

Khutoryansky *et al.* disclosed an imaging system and method for generating an image of an object, the imaging system configured to operate in a plurality of modes of operation including at least three modes (radiographic, fluoroscopic, tomographic, tomosynthesis, etc.) and comprising: a source assembly comprising a movable x-ray source (112, 182) configured to emit x-rays; a detector assembly comprising a movable detector (126, 128, 166); a positioning means (the overall system) for positioning the source assembly and the detector assembly relative to the object, the source assembly and the detector assembly are movably coupled to the positioning means, wherein the positioning means comprises a base (the room) and an arm (154) movably coupled to the base; a controller (120) enabling an operator to selectively operate the system in a

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plurality of modes, wherein the positions of the detector assembly and the source assembly are altered based on the selected mode; a table (116) for supporting the object, the source and the detector are movable relative to the table.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4-11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baba *et al.* (U. S. Patent No. 5,598,453) in view of Roos *et al.* (U. S. Patent No. 6,041,097).

Baba *et al.* disclosed an imaging system for generating an image of an object (14), the imaging system configured to operate in a plurality of modes of operation including at least three modes (x-ray fluoroscopic, radiographic operation, or CT scan), comprising: a source assembly (2) comprising a movable x-ray source configured to emit x-ray signals; a detector assembly (4) comprising a movable detector; a positioning means (8), comprising a base (inherent) and a gantry rotatably coupled to the base, for positioning the source assembly and the detector assembly relative to the object, the source assembly coupled to the positioning means and the detector assembly coupled to the positioning means; a controller (1) enabling an operator to selectively operate the system in a plurality of modes; a table (9) for supporting the object, the source assembly and the detector assembly are movable relative to the table, the positioning means is movable relative to the table.

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However, *Baba et al.* did not teach that: (1) the source assembly and the detector assembly are movably coupled to the positioning means; and (2) the detector comprises at least one detector panel.

Roos et al. disclosed an imaging system, wherein the detector assembly, comprising a detector panel (20), is movably coupled to the positioning means (10).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to: (1) movably couple the source assembly and the detector assembly to the positioning means, since a person would be motivated to alter the magnification in order to examine small regions in detail; and (2) substitute a detector panel for an image intensifier, since a person would be motivated replace the image intensifier, which is likely to produce distorted images due to its electron imaging system.

6. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Baba et al.* (U. S. Patent No. 5,598,453) and *Roos et al.* (U. S. Patent No. 6,041,097) as applied to claim 4 above.

Baba et al. in combination with *Roos et al.* disclosed an imaging system for generating an image of an object (14), comprising a base (inherent) and a gantry rotatably coupled to the base.

However, these references do not teach an imaging system comprising a C-arm.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to replace the gantry with a C-arm, since a person would be motivated to substitute a less expensive, but functionally equivalent apparatus for a more expensive one.

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7. Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khutoryansky *et al.* (U. S. Patent No. 5,636,259) as applied to claim 27 above, and further in view of Roos *et al.* (U. S. Patent No. 6,041,097).

Khutoryansky *et al.* disclosed an imaging system and method for generating an image of an object, the imaging system configured to operate in a plurality of modes of operation including at least three modes (radiographic, fluoroscopic, tomographic, tomosynthesis, etc.) and comprising: a source assembly comprising a movable x-ray source (112, 182) configured to emit x-rays; a detector assembly comprising a movable detector (126, 128, 166).

However, Khutoryansky *et al.* did not teach that: (1) the detector assembly comprises at least one detector panel.

Roos *et al.* disclosed an imaging system, wherein the detector assembly, comprising a detector panel (20), is movably coupled to the positioning means (10).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to substitute a detector panel for an image intensifier, since a person would be motivated replace the image intensifier, which is likely to produce distorted images due to its electron imaging system.

Allowable Subject Matter

8. Claims 3, 12-14, 20, 25, 30-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

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The allowable subject matter in claim 3 refers to a method in accordance with claim 1, wherein positioning the source assembly and the detector assembly comprises the step of rotating the detector assembly and the source assembly about the object.

The allowable subject matter in claim 12 refers to an imaging system in accordance with claim 11, wherein at least one the detector panel is rotatable relative to the positioning means.

The allowable subject matter in claims 13 and 14 refers to an imaging system in accordance with claim 11, wherein the detector comprises a first detector panel and a second detector panel.

The allowable subject matter in claim 20 refers to a system in accordance with claim 18, wherein to alter the position of the detector assembly and the source assembly, the system is configured to rotate the position means relative to the base so that the detector assembly and the source assembly are rotated about the object.

The allowable subject matter in claim 25 refers to a system in accordance with claim 24, wherein to move the detector assembly and the source assembly relative to the table, the system is configured to rotate the detector assembly and the source assembly about the table.

The allowable subject matter in claims 30-33 refers to a system in accordance with claim 26, wherein the detector assembly comprises a first detector panel and a second detector panel, and wherein to collect image data, the system is configured to angularly position the first detector panel relative to the second detector panel.

The allowable subject matter in claim 34 refers to a system in accordance with claim 18, wherein the positioning means comprises an arm having a first end portion and a second end

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portion, wherein the x-ray source assembly coupled to the first end portion, and the detector assembly coupled to the arm second end portion.

The allowable subject matter in claim 35 refers to a system in accordance with claim 18, wherein the positioning means comprises a gantry rotatably coupled to the base.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (703) 308-6189. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached at (703) 305-3492. The fax phone numbers for the


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organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Allen C. Ho
Examiner
Art Unit 2882

ACH
August 26, 2002


ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800